

CLAIMS

What is claimed is:

1 1. A medical device for delivering a medicament to a patient,
2 comprising:

3 a syringe assembly comprising:

4 a barrel having a forward end and a rear end and defining a
5 reservoir within which the medicament may be contained;

6 a needle cannula having a forward tip and being coupled to said
7 forward end of said barrel and in fluid communication with said reservoir; and

8 a plunger having a first end with a stopper positioned in said
9 reservoir and a second end having a thumb pad for receiving medicament delivery
10 pressure for causing said plunger to move within said reservoir to cause the
11 medicament to be expelled from said reservoir;

12 a hollow shield body receiving said syringe barrel therein, said syringe
13 barrel being selectively movable within said shield body between a first position in which
14 said forward tip of said needle cannula is exposed, and a second position in which said
15 forward tip of said needle cannula is contained within said shield body;

16 a first retainer releasably securing said syringe barrel in said first position;
17 and

18 an urging member arranged between a portion of said hollow shield body
19 and a portion of said syringe barrel for urging said syringe barrel from said first position
20 toward said second position, said thumb pad being configured to interact with said first

21 retainer upon movement of said stopper to a position proximate said syringe barrel
22 forward end to release said syringe barrel from said first retainer and enable said urging
23 member to move said syringe barrel from said first position to said second position upon
24 release of medicament delivery pressure from said thumb pad.

1 2. The medical device of claim 1, wherein said hollow shield body
2 further comprises a flange clip connected proximate a rear facing end of said hollow
3 shield body, wherein said flange clip comprises said first retainer.

1 3. The medical device of claim 2, wherein said hollow shield body
2 further comprises a rim and said flange clip comprises a recess engaging said rim for
3 connecting said flange clip to said hollow shield body.

1 4. The medical device of claim 2, wherein said hollow shield body
2 further comprises a step having a rear facing surface for receiving an end of said urging
3 member.

1 5. The medical device of claim 4, wherein said syringe barrel further
2 comprises a radial flange for receiving another end of said urging member.

1 6. The medical device of claim 5, wherein said step divides said
2 hollow shield body into a first cylindrical portion having a first diameter and a second
3 cylindrical portion having a second diameter different than said first diameter, said
4 urging member being arranged in said second cylindrical portion.

1 7. The medical device of claim 5, wherein said flange clip comprises a
2 second retainer spaced axially from said first retainer, wherein said radial flange is
3 positioned between said first and second retainers when said syringe barrel is in said
4 second position.

1 8. The medical device of claim 7, wherein a front facing surface of
2 said second retainer and a rear facing surface of said radial flange are mutually inclined
3 to allow said flange to pass over said second retainer when said syringe barrel is moved
4 from said first position toward said second position.

1 9. The medical device of claim 7, wherein said first and second
2 retainers comprise flexible arms.

1 10. The medical device of claim 1, wherein said urging member
2 comprises a spring.

1 11. The medical device of claim 1, wherein said first retainer is formed
2 unitarily with said shield body.

1 12. The medical device of claim 1, wherein said syringe barrel further
2 comprises two axially spaced radial flanges.

1 13. The medical device of claim 12, wherein said first retainer is
2 arranged axially between said two axially spaced radial flanges and prevents forward

3 and rearward movement of said syringe barrel relative to said hollow shield body when
4 said syringe barrel is arranged in the fully retracted position.

1 14. The medical device of claim 1, wherein said syringe barrel is
2 plastic.

1 15. The medical device of claim 10, wherein said shield body
2 comprises a step having a rear facing surface for receiving an end of said spring.

1 16. The medical device of claim 15, wherein said syringe barrel further
2 comprises a radial flange for receiving another end of said spring.

1 17. The medical device of claim 16, wherein said step divides said
2 hollow shield body into a first cylindrical portion having a first diameter and a second
3 cylindrical portion having a second diameter different than said first diameter, said
4 spring being arranged in said second cylindrical portion.

1 18. The medical device of claim 1, wherein said first retainer is moved
2 radially outward to release said syringe barrel.

1 19. The medical device of claim 1, wherein said first retainer is moved
2 radially inward to release said syringe barrel.

1 20. A combination comprising a medical syringe assembly and a safety
2 shield, said medical syringe assembly comprising a barrel having a forward end and a
3 rear end and defining a reservoir within which a medicament may be contained, a

4 needle cannula having a forward tip and being coupled to said forward end of said
5 barrel and in fluid communication with said reservoir, and a plunger having a first end
6 with a stopper positioned in said reservoir and a second end having a thumb pad for
7 receiving medicament delivery pressure for causing said plunger to move within said
8 reservoir to cause the medicament to be expelled from said reservoir;

9 said safety shield comprising a hollow shield body receiving said syringe
10 barrel therein, said syringe barrel being selectively movable within said shield body
11 between a first position in which said forward tip of said needle cannula is exposed, and
12 a second position in which said forward tip of said needle cannula is contained within
13 said shield body, a first retainer releasably securing said syringe barrel in said first
14 position; and an urging member arranged between a portion of said hollow shield body
15 and a portion of said syringe barrel for urging said syringe barrel from said first position
16 toward said second position, said thumb pad being configured to interact with said first
17 retainer upon movement of said stopper to a position proximate said syringe barrel
18 forward end to release said syringe barrel from said first retainer and enable said urging
19 member to move said syringe barrel from said first position to said second position upon
20 release of medicament delivery pressure from said thumb pad.

1 21. The medical device of claim 20, wherein said hollow shield body
2 further comprises a flange clip connected proximate a rear facing end of said hollow
3 shield body, wherein said flange clip comprises said first retainer.

1 22. The medical device of claim 21, wherein said hollow shield body
2 further comprises a step having a rear facing surface for receiving one end of said
3 urging member.

1 23. The medical device of claim 22, wherein said syringe barrel further
2 comprises a radial flange for receiving another end of said urging member.

1 24. The medical device of claim 23, wherein said step divides said
2 hollow shield body into a first cylindrical portion having a first diameter and a second
3 cylindrical portion having a second diameter different than said first diameter, said
4 urging member being arranged in said second cylindrical portion.

1 25. The medical device of claim 20, wherein said urging member
2 comprises a spring.

1 26. A medical device for delivering a medicament to a patient,
2 comprising:

3 a syringe assembly comprising:

4 a barrel having a forward end and a rear end and defining a
5 reservoir within which the medicament may be contained;

6 a needle cannula having a forward tip and being coupled to said
7 forward end of said barrel and in fluid communication with said reservoir; and

8 a plunger having a first end with a stopper positioned in said
9 reservoir and a second end having a thumb pad for receiving medicament delivery

10 pressure for causing said plunger to move within said reservoir to cause the
11 medicament to be expelled from said reservoir;

12 a hollow shield body receiving said syringe barrel therein, said syringe
13 barrel being selectively movable within said shield body between a first position in which
14 said forward tip of said needle cannula is exposed, and a second position in which said
15 forward tip of said needle cannula is contained within said shield body;

16 retainer means for releasably securing said syringe barrel in said first
17 position;

18 means for urging said syringe barrel from said first position toward said
19 second position; and

20 said thumb comprising means for interacting with said first retainer upon
21 movement of said stopper to a position proximate said syringe barrel forward end to
22 release said syringe barrel from said first retainer and enable said urging means to
23 move said syringe barrel from said first position to said second position upon release of
24 medicament delivery pressure from said thumb pad.

1 27. The medical device of claim 26, wherein said means for interacting
2 comprises a configured shape of said thumb pad.

1 28. The medical device of claim 26, wherein said means for urging
2 comprises a spring.